## ELECTRICAL LEGEND

1-HOUR RATED FIRE BARRIER
2-HOUR RATED FIRE BARRIER

EXISTING

NEW WORK

INTEGRAL GROUND FAULT PROTECTION OR ON GROUND FAULT PROTECTED CIRCUIT.

CIRCUIT NUMBER

SAME AS ABOVE EXCEPT 2 DUPLEX RECEPTACLES.

• SPECIAL PURPOSE RECEPTACLE, CONFIGURATION AS NOTED.

---- ISOLATED GROUND TYPE WITH ORANGE INDICATOR

\$n SPDT IVORY WALL SWITCH, 120/277VAC, 20A. n = M = MANUAL MOTOR STARTER

COMBINATION MOTOR STARTER / NON-FUSED DISCONNECT SWITCH

NON-FUSED DISCONNECT SWITCH

FUSED DISCONNECT SWITCH

JUNCTION BOXMOTOR CONNECTION

D/S DISCONNECT SWITCH

HOMERUN TO PANELBOARD

RACEWAY CONCEALED IN WALL, CEILING, OR FLOOR

EXPOSED RACEWAY

CR ACCESS CONTROL CARD READER BY OTHERS. PROVIDE 3/4"C ROUGH—IN.

UNO UNLESS NOTED OTHERWISE

OFOI OWNER FURNISHED, OWNER INSTALLED

## **ELECTRICAL KEYNOTES**

PROVIDE 120VAC INTERLOCK WIRING TO SHUTDOWN ALL IN-ROW COOLERS, UPS/PDU'S AND CLOSE SMOKE DAMPER ON INITIATION OF SMOKE DETECTOR, OR WHEN A MANUAL RELEASE PULL STATION IS PULLED OR EPO SWITCH IS ACTIVATED. COORDINATE REQUIREMENTS WITH FIRE SUPPRESSION SYSTEM CONTRACTOR. PROVIDE 120VAC POWER FROM CIRCUIT FEEDING FIRE SUPPRESSION PANEL. SEE SHEET M1 FOR ADDITIONAL REQUIREMENTS.

PROVIDE 120VAC, 20A SPARE CIRCUIT FROM PANEL 12EML:8, LOCATED ON SOUTH SIDE OF CENTER STAIR, ~200L.F. PROVIDE CONTROL AND MONITOR MODULES AS REQUIRED TO MONITOR THE STATUS OF THE FIRE SUPPRESSION SYSTEM AND SEND AN ALARM & TROUBLE SIGNAL TO THE SIMPLEX BUILDING FIRE ALARM CONTROL PANEL. FIELD VERIFY REQUIREMENTS.

PROVIDE AN EPO STATION WITH LABELING THAT READS "EMERGENCY POWER OFF", PUSH TO ACTIVATE, TURN TO RESET, WITH CLEAR COVER. EQUAL TO SAFETY TECHNOLOGY INTERNATIONAL #STI-2211PO EPO AND #STI-6518 COVER. PROVIDE RELAYS AND INTERLOCK WIRING BETWEEN THE EPO AND FIRE SUPPRESSION SYSTEM FOR EQUIPMENT SHUTDOWN. IF EPO IS ACTIVATED OR FIRE SUPPRESSION SYSTEM IS IN ALARM THE INTERLOCK SHALL DISABLE UPS A1,A2, B1, B2 & PDU "A1", "A2", "B1" & "B2" AND SHALL SHUTDOWN IN-ROW COOLERS ACØ1,ACØ2,ACØ3 AND ACØ4. INTERLOCK SHALL ALSO CLOSE FIRE SMOKE DAMPERS. SEE EMERGENCY POWER OFF SCHEMATIC ON SHEET E3.

INSTALL ELEVEN 20A/3P C/B'S AND ELEVEN WHIPS FURNISHED BY OTHERS FOR ONE RELOCATED PDU AS DIRECTED BY THE OWNER. ALL OTHER WHIPS AND CIRCUIT BREAKERS ARE FURNISHED/INSTALLED BY OTHERS WITH NEW PDU'S.

## **ELECTRICAL NOTES**

EXISTING CABLING 5' O.C.

THE DRAWINGS ARE DIAGRAMMATIC AND SHOW ELECTRICAL LAYOUTS FOR BIDDING PURPOSES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PREPARE SHOP DRAWINGS, CONFIRM SPACE ALLOCATIONS AND ADJUST CONDUIT AND EQUIPMENT LOCATIONS TO MATCH ACTUAL FIELD CONDITIONS. MAINTAIN ALL RECOMMENDED CLEARANCES FOR MAINTENANCE, REMOVAL, AND REPAIR OF EQUIPMENT.

1. ALL WIRING IN FINISHED AREAS SHALL BE CONCEALED ABOVE CEILINGS. ROUTE EXPOSED ONLY IN EQUIPMENT ROOMS WHERE CONCEALMENT IS NOT POSSIBLE. WORKMANSHIP IN EXPOSED LOCATIONS SHALL BE MADE WITH EXTRA CARE FOR A PROFESSIONAL APPEARANCE. FINAL CONNECTIONS TO EQUIPMENT WITH 12" LENGTH OF WEATHERTIGHT FLEXIBLE CONDUIT. EMT RACEWAYS INDOORS AND RIGID GALVANIZED STEEL RACEWAYS OUTDOORS. STEEL SETSCREW OR STEEL COMPRESSION FITTINGS ON EMT. STRAP 5' O.C. AND WITHIN 18" OF BOXES IN EXPOSED LOCATIONS LESS THAN 7' AFF. NO DIECAST FITTINGS ALLOWED. CONTROL CIRCUIT RACEWAY TO CONFORM TO POWER WIRING REQUIREMENTS.

2. ALL WORK IN FULL ACCORDANCE WITH NATIONAL ELECTRICAL CODE, LOCAL AUTHORITY REQUIREMENTS AND MANUFACTURERS' RECOMMENDATIONS. ALL CONDUCTORS THHN/THWN, 9ØC, STRANDED COPPER. MINIMUM BRANCH CIRCUITS ARE 2#12,#12G,1/2"C. RUN #1Ø PHASE AND NEUTRAL CONDUCTORS WHEN TOTAL ONE WAY LENGTH OF ANY CIRCUIT EXCEEDS 1ØØ LINEAR FEET. ALL GROUNDING IN ACCORDANCE WITH NEC ARTICLE 25Ø. ALL RACEWAYS REQUIRE A GROUND CONDUCTOR. COMBINE BRANCH CIRCUIT RACEWAYS AS ALLOWED BY NEC & LOCAL AUTHORITY TO REDUCE INSTALLATION COST. PROVIDE CONDUCTORS WITH AMPACITY EQUAL TO OR EXCEEDING OVERCURRENT PROTECTIVE DEVICE RATING WITH ALL DERATING FACTORS CONSIDERED. SELECT RACEWAY SIZE, PULL AND JUNCTION BOX SIZE, AND LOCATIONS IN STRICT ACCORDANCE WITH NEC, 1/2"C MINIMUM.

3. ALL ELECTRICAL WORK, CABLING AND RACEWAYS IN THE AREA OF RENOVATION SHALL BE BROUGHT INTO COMPLIANCE WITH THE CURRENTLY ENFORCED REQUIREMENTS OF CODE OFFICIAL. PROVIDE J—HOOKS AND NYLON WIRE TIES TO BUNDLE AND SUPPORT NEW AND

4. THE FIRE ALARM SYSTEM WILL BE EXPANDED AND DEVICES/APPLIANCES ADDED AND INTEGRATED INTO THE EXISTING SYSTEMS AS INDICATED HEREIN. PROVIDE ALL ASSOCIATED PROGRAMMING, WIRING, POWER SUPPLIES, COORDINATION AND DEMONSTRATION TO CODE OFFICIALS AS WELL AS OWNER TRAINING ON THE USE OF THE NEW SYSTEMS. COMPLY WITH THE MANUFACTURERS AND UL REQUIREMENTS IN ADDITION TO LOCAL AUTHORITY REQUIREMENTS. ALL WIRING IN EMT RACEWAY, STEEL SETSCREW OR COMPRESSION FITTING. COMPLY WITH AHJ, NFPA 72, AND MANUFACTURER REQUIREMENTS. PAINT JBOX COVERS RED AND LABEL CIRCUITS ON OUTSIDE OF COVER. ALL DEVICES AND APPLIANCES SHALL BE INDIVIDUALLY ADDRESSABLE. PHOTOELECTRIC SMOKE DETECTORS. FIELD VERIFY ALL REQUIREMENTS.

5. PROVIDE RECORD DRAWINGS. INCLUDE MARK-UPS OF CIRCUIT NUMBERS. IDENTIFY ALL ELECTRICAL EQUIPMENT INCLUDING: PANELBOARDS, SAFETY SWITCHES, INDIVIDUALLY MOUNTED CIRCUIT BREAKERS, AND RELAYS. LABELING SHALL INCLUDE THE CIRCUIT NUMBER AT EACH DISCONNECT OR RECEPTACLE SERVING EQUIPMENT. SELF ADHESIVE VINYL LABELS WITH 1/4" LETTERING FOR PANEL/ SAFETY SWITCH LABELS. TYPED

DIRECTORY REQUIRED AT PANELS.

6. CONDUIT TERMINATIONS FOR ALL WEATHER EXPOSED EQUIPMENT SUCH AS DISCONNECT SWITCHES SHALL BE BOTTOM OR SIDE ENTRANCE. NO TOP ENTRANCE TERMINATIONS ALLOWED FOR WEATHER EXPOSED EQUIPMENT.

 ALL EXPOSED CABLING & LIQUID TIGHT FLEXIBLE METAL CONDUIT w/ PVC JACKETING IN TELEPHONE SWITCHROOM SHALL BE PLENUM RATED.

8. PROVIDE TEMPORARY LIGHTING AND POWER AS REQUIRED. ALL PHASING SHALL BE

COORDINATED WITH THE OWNER.

9. MOVE ANY ELECTRICAL WORK IN THE PATH OF NEW WORK WHETHER OR NOT IT IS

SPECIFICALLY INDICATED ON THE PLANS, TO PROVIDE ACCESS FOR INSTALLATION, SERVICE, AND MAINTENANCE.

1Ø. RECEPTACLES 2Ø AMP RATED, SWITCHES 2Ø AMP RATED, SPECIFICATION GRADE, GRAY WITH S.S. WALL PLATES. BRYANT, LEVITON, HUBBELL, OR P&S. REPLACE EXISTING RECEPTACLES AND COVERS WHERE EXISTING RECEPTACLE LOCATIONS ARE BEING REUSED.

11. LIGHT FIXTURES AND LIGHTING CIRCUITING BY OTHERS.

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12. MAINTAIN 1HR FIRE WALL. PATCH ALL OPENINGS. FIRESTOP ALL PENETRATIONS. FIELD VERIFY REQUIREMENTS.

13. SAFETY SWITCHES SHALL BE TYPE HD AS MANUFACTURED BY SQUARE "D", GENERAL ELECTRIC, SIEMENS, ITE OR WESTINGHOUSE. ENCLOSURES TO BE NEMA 1 FOR INTERIOR USE AND NEMA 3R FOR EXTERIOR USE. SWITCHES TO HAVE ARC SHIELDS, TO BE OF ENCLOSED CONSTRUCTION AND FUSIBLE OR NON-FUSIBLE AS INDICATED. SWITCHES TO BE RATED FOR EITHER 240-VOLT AC OR 600-VOLT AC TO EXCEED VOLTAGE RATING OF EQUIPMENT SERVED. ALL SWITCHES SHALL BE CAPABLE OF INTERRUPTING LOCKED ROTOR CURRENT OF MOTOR WHICH IT SERVES.

14. PANEL BOARDS SHALL BE TYPE SQUARE "D" NQOD, NF OR I—LINE AS INDICATED OR EQUAL BY GE, SIEMENS, OR CUTLER HAMMER. PANELS TO HAVE BOLT—ON TYPE C/B.

15. PROVIDE ALL CONTROL / INTERLOCK WIRING AND RACEWAY BETWEEN IN—ROW COOLERS AND CU'S. COORDINATE EXACT REQUIREMENTS WITH EQUIPMENT VENDORS.

16. PROVIDE INTERLOCK WIRING FOR IN-ROW COOLERS 'S TO SHUTDOWN ON INITIAL ALARM FROM CLEAN AGENT FIRE SUPPRESSION SYSTEM PANEL.

ENGINEERING

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REVISIONS

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2" IF REPRODUCED ACCURATELY

11054 TE 23 APR 12

PROJECT NUMBER

SHEET TITLE

23 APR 12

DRAWN CHECKED

CBW RCH

ELECTRICAL PLANS

SHEET NUMBER

E1